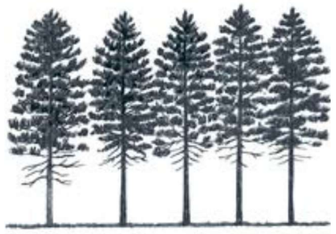
Warm & Moist : Grand fir/Douglas Fir Mixed conifer	Existing Condition	Desired Future Condition	Silvicultural Treatment Options: Designed to move the stands toward the desired future condition. (All treatments will be based on the existing conditions of each treated stand.)
Stand Initiation Stage	Young Stands, often grand fir with a mix of other species - planted or natural regeneration. Starting to see tree to tree competition and high stand densities.	Open grown, vigorous stands. Feature the best tree and species composition for the site, with a preference for early seral species. • Estimated range between 200-300 trees per acre depending on site conditions.	• No treatment proposed for this project
Stem Exclusion Stage 	Even-aged stand. Crown to crown competition. Density related stressors. Past fir engraver beetle activity present with standing and down dead trees creating a fuels hazard. Ingrowth and competition from shade tolerant species. Ladder fuels may be present. Crowns are raised and average 30% or less of total tree height across most of the treatment area. Pockets of dead and dying trees are scattered across the stand. Signs of root disease present, including Schweinitzii conks, butt swelling and uprooted trees with signs of root decay.	Stands that is resistant and resilient to insects and disease. Fire is a natural disturbance process in these stands and often stand replacing in nature. The species composition is dependent on location and conditions; often a mixed conifer stand is desired. Stand densities are variable and may allow for new age classes. Retain the best genetics and phenotypic characters for a vigorous and resilient stand. • Mixed species composition desired to reduce mortality from root disease with grand fir/Douglas-fir comprising of less than 35% of the stand	Treatments shall vary across the landscape for diversity, forest health, wildlife habitat, and esthetics. **Intermediate:** • Improvement Cut • Commercial Thin • Pile and burn slash **Regeneration:** • Shelterwood Cut • Clearcut with Reserves • Sanitation or Salvage Cut • Prescribed Fire: site prep for planting could include broadcast, jackpot or piling burning – fireline may be added if broadcast burning is utilized • Post-harvest planting of root disease resistant species (western larch, western white pine and ponderosa pine)
Mature with Understory Re-initiation Stage 	Dominant and codominant grand fir often growing with a mix of Douglas-fir and western redcedar. It is rare to find mature relic western white pine, western larch or ponderosa pine towering above the dense grand fir/Douglas-fir stand with little to no young early seral species present to perpetuate a mixed conifer stand containing ponderosa pine, western larch or western white pine in the future. A buildup of needle litter, duff, down trees and ladder fuels is putting these stands at risk for fire. Under the existing conditions, these stands will likely experience stand replacing fire and are currently experiencing insect and disease related mortality. Pockets of dead and dying trees are scattered across the stand. Root disease is common throughout the stand, along with stem decays, resulting in loss of volume and in increase in downed woody debris.	An even-age or two-age stand that is resistant and resilient to insects, disease and fire. The stands shall be generally open grown with variable density. A mix of age-classes is preferred while retaining the healthies individuals, best genetics and phenotypic characteristics for a vigorous and resilient stand. Species composition will feature rust-resistant western white pine, western larch, western redcedar or other species where site conditions allow. Grand fir/Douglas-fir component of stand comprises of less than 50% of the stand. Stand densities shall remain low enough to reduce the risk of beetle, disease and fire. • Mixed species composition desired to reduce mortality from root disease with grand fir/Douglas-fir comprising of less than 50% of the stand	Treatments shall vary across the landscape for diversity, forest health, wildlife habitat, and esthetics. **Intermediate:** • Improvement Cut • Commercial Thin • Pile and burn slash **Regeneration:** • Seed Tree Cut • Shelterwood Cut • Clearcut with Reserves • Group Selection/Single Tree Selection • Sanitation or Salvage Cut • Prescribed Fire: site prep for planting could include broadcast, jackpot or piling burning – fireline may be added if broadcast burning is utilized • Post-harvest planting of root disease resistant species (western larch, western white pine and ponderosa pine)